



Missouri Weekly Influenza Surveillance Report 2015-2016 Influenza Season¹

Week 16: April 17– April 23, 2016

All data are preliminary and may change as more reports are received.

Summary:

- The estimated influenza activity in Missouri is Regional².
- A season-to-date total of 18,335 laboratory-positive³ influenza cases have been reported in Missouri. The influenza type for reported cases season-to-date includes 71% influenza A, 27% influenza B, and 2% untyped. Influenza A accounted for 51% and influenza B accounted for 47% of reported cases during Week 16, with influenza A remaining the predominant virus type reported this season. The highest season-to-date rates of reported laboratory-positive influenza cases are among children aged 0-4 years (923 cases per 100,000 population) and children aged 5-14 years (494 cases per 100,000 population). There were no laboratory-confirmed influenza cases reported by the Missouri State Public Health Laboratory (MSPHL) during Week 16.
- The Centers for Disease Control and Prevention (CDC) has antigenically characterized 11 influenza isolates from Missouri, to date, this influenza season. Two viruses were antigenically similar to the A/Switzerland/9715293/2013-like (H3N2) virus, seven viruses were antigenically similar to the A/California/7/2009-like (H1N1)pdm09 virus, and two viruses were antigenically similar to the B/Brisbane/60/2008-like (Victoria lineage) virus. Both an A/Switzerland/9715293/2013-like virus and an A/California/7/2009-like virus are included in the 2015-2016 Northern Hemisphere trivalent vaccine formulation. An A/Brisbane/60/2008-like virus is included in the 2015-2016 Northern Hemisphere quadrivalent vaccine formulation.
- Influenza-like illness activity was below baseline for both the Missouri Outpatient ILI Surveillance Network (ILINet) and the hospital emergency room visit chief complaint data reported through ESSENCE during Week 16. The reported percentage of visits for ILI was 1.77% and 1.07% through ILINet and ESSENCE respectively⁴.
- No influenza-associated pediatric deaths have been reported in Missouri, to date, this influenza season. During Week 15, 73 deaths were reported involving Pneumonia and Influenza (P&I) reported to the Bureau of Vital Records, resulting in a season-to-date total of 1,888 P&I associated deaths in Missouri⁵.
- Six influenza or ILI-associated outbreaks have been reported in Missouri, to date, this influenza season. No influenza or ILI-associated school closures have been reported in Missouri, to date, this influenza season.
- Influenza activity decreased in the U.S. during Week 15. National influenza surveillance information is prepared by the CDC and is included in the weekly FLUVIEW report, which is available online at <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>.

¹The 2015-2016 influenza season in Missouri began CDC Week 40 (week ending October 10, 2015) through CDC Week 20 (week ending May 21, 2016).

²Regional is defined as: Outbreaks of influenza or increases in ILI and recent laboratory-confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.

³Laboratory-positive influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

⁴Influenza-like illness (ILI) is defined by ILINet as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat without a known cause other than influenza. Influenza-like illness (ILI) is defined by ESSENCE as Emergency Department chief complaints that contain keywords such as “flu”, “flulike”, “influenza” or “fever” plus “cough” or “fever” plus “sore throat”.

⁵The P&I data are available one week later. The P&I data for the CDC Week provided is the most current data available.

Surveillance Data:

Interactive Maps

The county specific influenza data are provided through interactive maps available at <http://on.mo.gov/1QAzQua>. Click on the county to view the influenza data specific to that county.

- Reported Laboratory -positive Influenza Cases by Influenza Type by County, CDC Week 16
- Reported Laboratory -positive Influenza Cases by Influenza Type by County, Season-to-Date
- Percentage of Laboratory-positive Influenza Cases Reported to be Influenza Type A

Data Tables and Graphs

Table 1. Number of Laboratory-positive[†] Influenza Cases by Influenza Type, Missouri, CDC Week 16 (April 17 – April 23, 2016)

Influenza Type	Week 14	Week 15	Week 16	2015-2016* Season-to-Date
Influenza A	571	400	441	12,952
Influenza B	408	420	412	4,965
Influenza Unknown Or Untyped	11	24	15	415
Total	990	844	868	18,335

[†]Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

*Influenza Season begins Week Ending October 10, 2015 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv).

Table 2. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Age Group, Missouri, CDC Week 16 (April 17 – April 23, 2016)

Age Group	Week 16 Cases	Week 16 Rate [‡]	2015-2016* Season-to-Date	2015-2016* Season-to-Date Rate [‡]
00-04	105	28	3,480	923
05-14	240	31	3,870	494
15-64	401	10	9,419	237
65+	122	13	1,566	173
Total	868	14	18,335	303

[†]Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.

*Influenza Season begins Week Ending October 10, 2015 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)

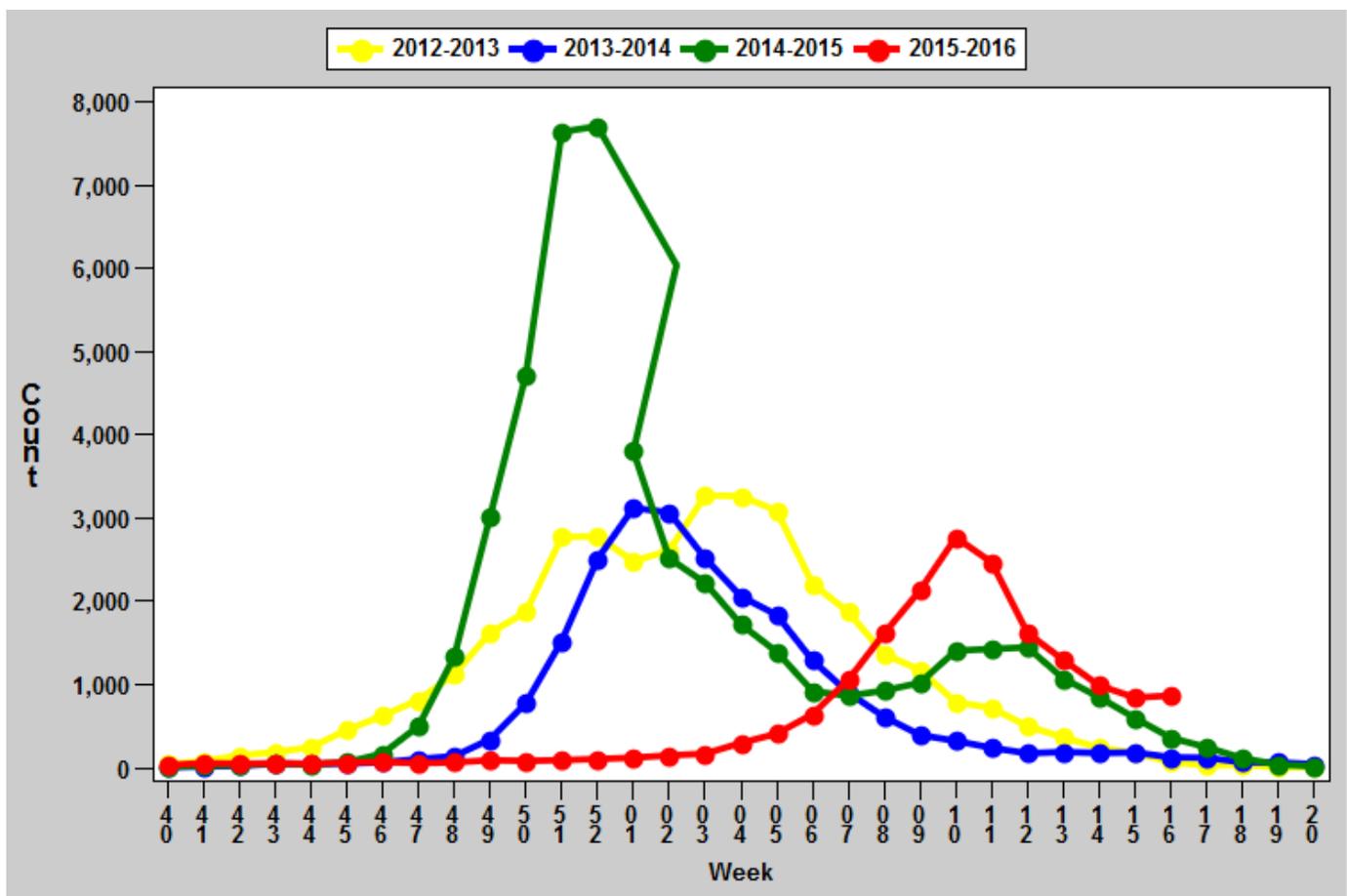
[‡]Incidence Rate per 100,000 population

Table 3. Number of Laboratory-positive[†] Influenza Cases and Case Rates by Region, Missouri, CDC Week 16 (April 17 – April 23, 2016)

District	Week 16 Cases	Week 16 Rate [‡]	2015-2016* Season-to-Date	2015-2016* Season-to-Date Rate [‡]
CE	87	13	2,087	316
EA	235	10	5,969	265
NW	283	18	6,199	391
SE	99	21	1,392	292
SW	164	15	2,688	251
Total	868	14	18,335	303

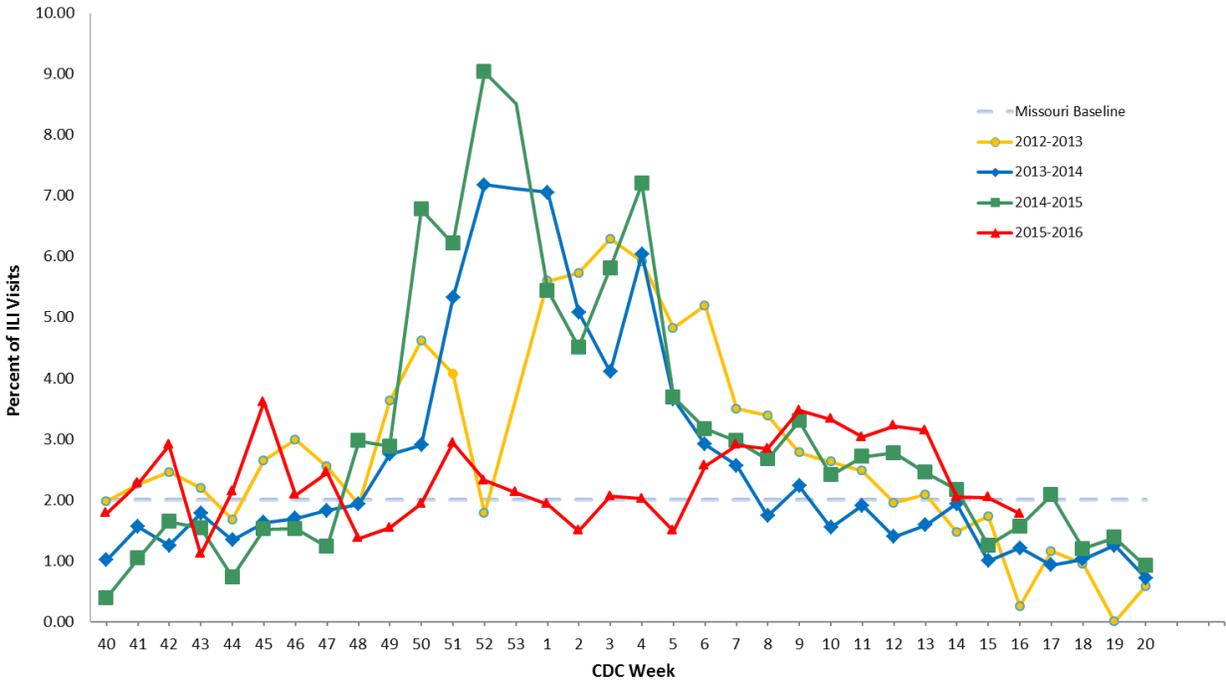
[†] Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
^{*}Influenza Season begins Week Ending October 10, 2015 (CDC Week 40) Data Source: Missouri Health Information Surveillance System (WebSurv)
[‡] Incidence Rate per 100,000 population

Graph 1. Number of Laboratory-positive[†] Influenza Cases by CDC Week, Missouri, 2012-2016*



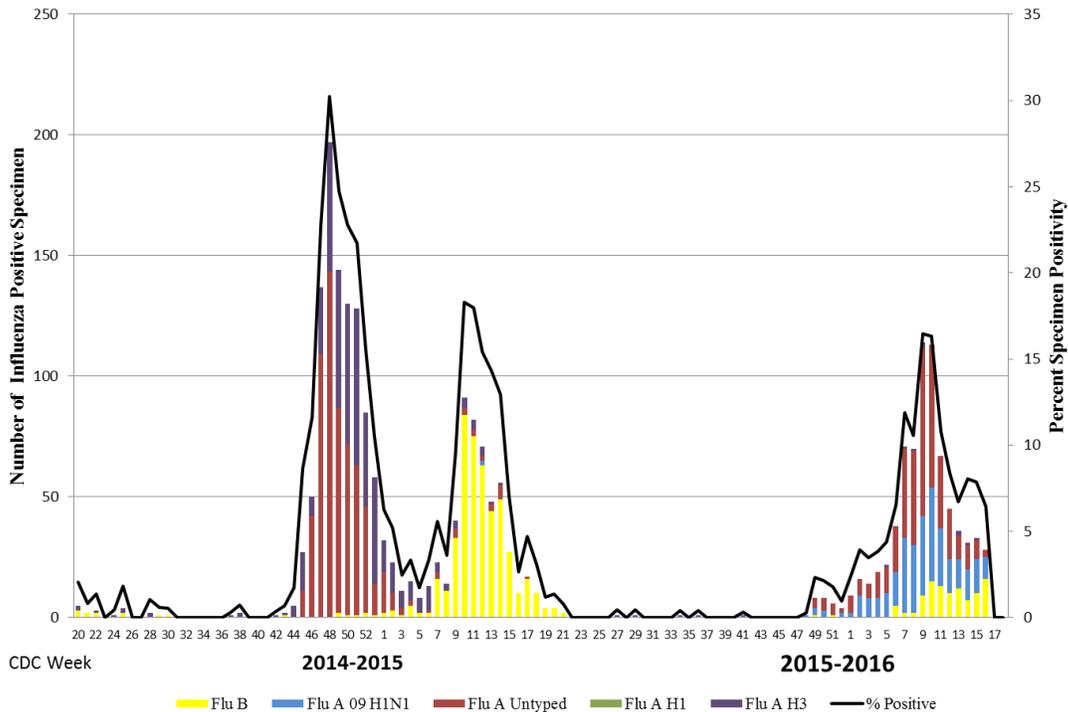
[†] Laboratory-positive Influenza includes the following test methods: rapid influenza diagnostic tests (antigen), reverse transcriptase polymerase chain reaction (RT-PCR) and other molecular assays, immunofluorescence antibody staining (Direct (DFA) or Indirect (IFA)), or viral culture.
^{*}2015-2016 Season-to-Date through the week ending May 21, 2016 (Week 20). 2014-2015 Season had 53 weeks rather than the usual 52. Data Source: Missouri Health Information Surveillance System (WebSurv).

Graph 2. Percentage of Visits for Influenza-like-Illness (ILI), Missouri Outpatient ILI Surveillance Network (ILINet) 2012-2016*



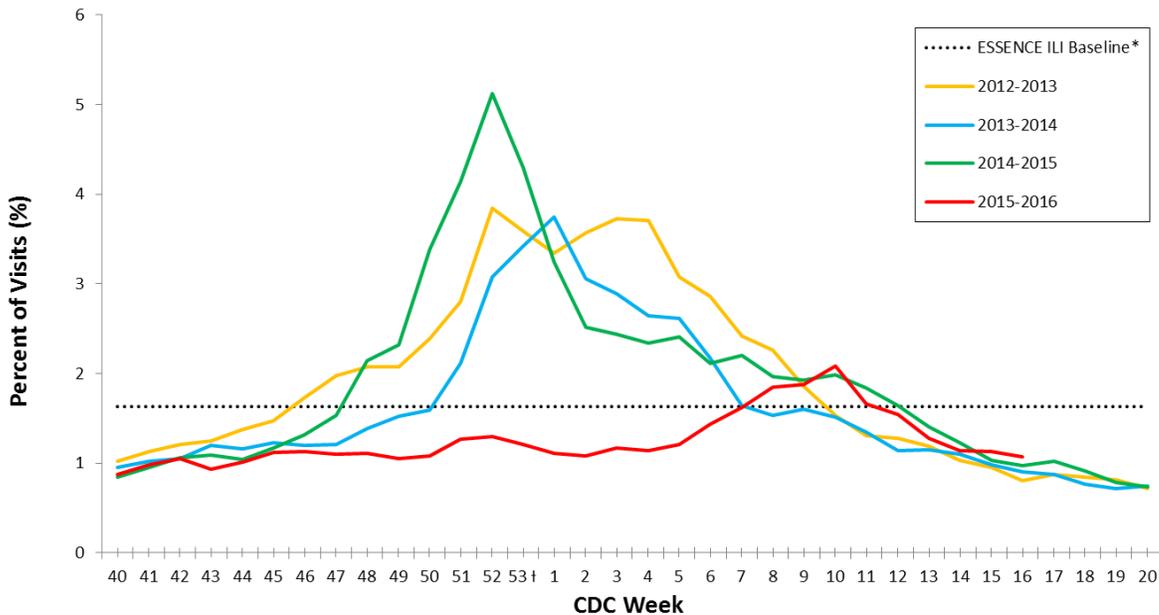
*2015-2016 Season-to-Date through the week ending May 21, 2016 (Week 20). 2014-2015 Season had 53 weeks rather than the usual 52.

Graph 3. St. Louis Children’s Hospital Season-to-Date PCR (+) and Rapid Influenza Tests



*Data Source: St. Louis Children’s Hospitals
 *This data is based on testing in all age groups in St Louis Metro and SE Missouri
 *Influenza Season begins Week Ending October 10, 2015 (CDC Week 40)

Graph 4. Weekly Percentage of Influenza-like Illness (ILI) in ESSENCE Participating Hospitals, for 2012-2016 Influenza Seasons



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. Includes data from 120 reporting facilities in Missouri ESSENCE (<http://health.mo.gov/data/essence/pdf/missourimap.pdf>).

* The ESSENCE ILI Baseline is the mean percent of ILI visits for each week during the previous three years (2012-14) when percentage of ILI visits were less than 2% of total visits, plus two standard deviations.

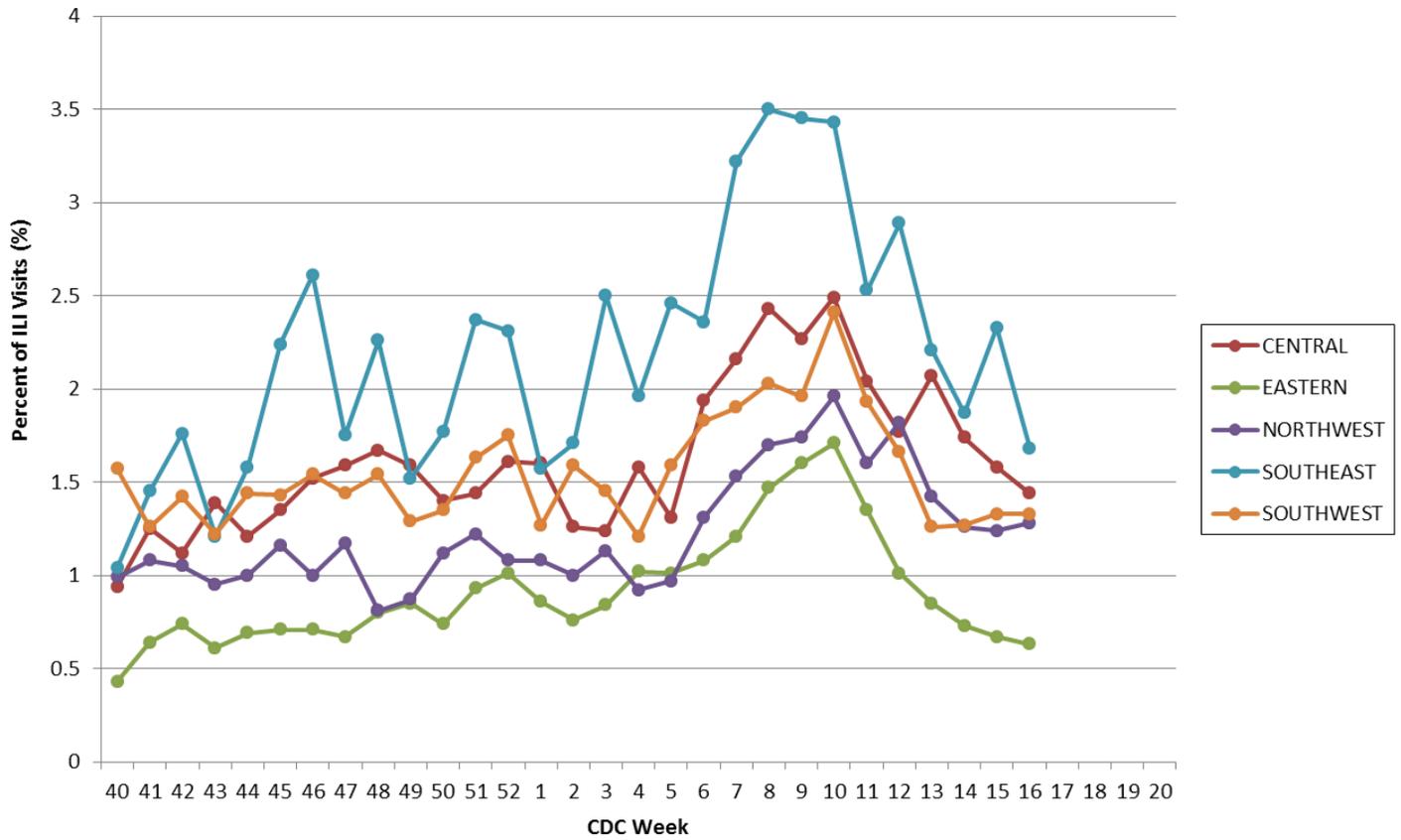
† ILI % for week 53 was estimated for previous seasons by averaging values for weeks 52 and 1 in order to compare to the ILI % for week 53 of the 2014-15 influenza season.

Table 4. Percentage of Influenza-like Illness (ILI) Visits per Total Visits to Hospital Emergency Rooms from ESSENCE by District and Statewide for Week Ending April 23, 2016

District	Age 0-4 (%)	Age 5-17 (%)	Age 18-44 (%)	Age 45-64 (%)	Age 65+ (%)	Total Percentage
Northwest	1.59	2.39	1.20	1.13	0.66	1.28
Central	3.58	2.75	1.29	1.02	0.53	1.44
Eastern	1.09	0.86	0.66	0.52	0.34	0.63
Southeast	6.72	3.25	1.10	0.97	0.77	1.68
Southwest	4.47	2.77	0.77	1.06	0.47	1.33
Statewide	2.27	1.90	0.93	0.85	0.49	1.07

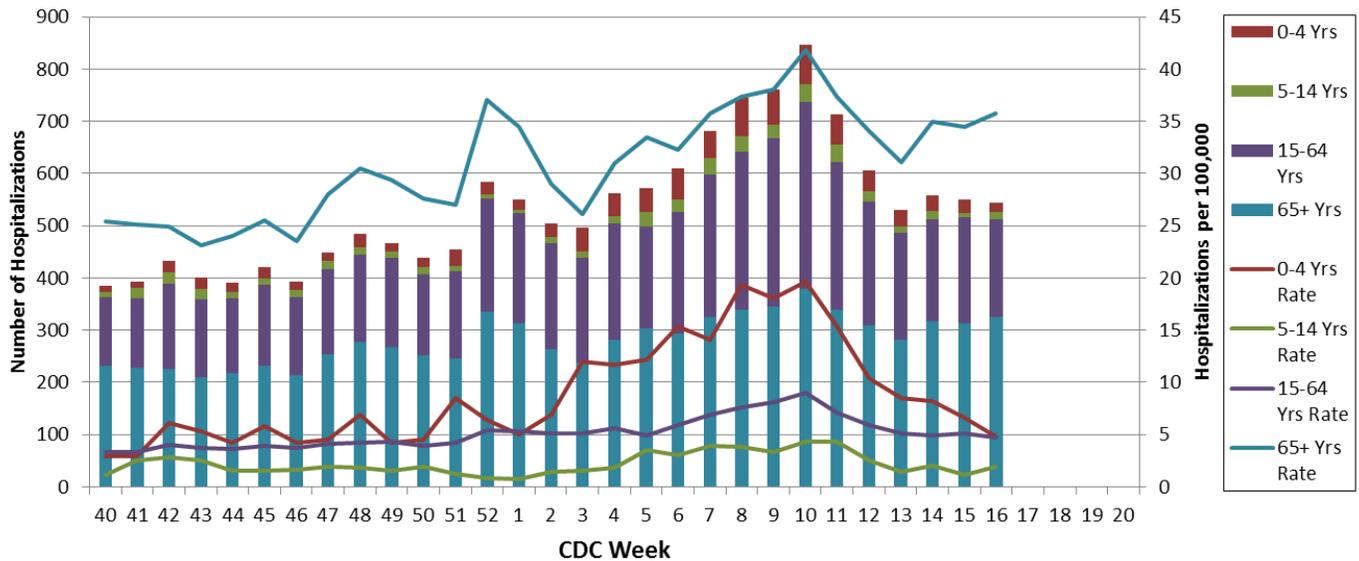
Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. Includes data from 120 reporting facilities in Missouri ESSENCE (<http://health.mo.gov/data/essence/pdf/missourimap.pdf>).

Graph 5. Percentage of Influenza-like Illness (ILI) Visits per Total Visits to Hospital Emergency Rooms from ESSENCE by District for Week Ending April 23, 2016



Data Source: Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE. Includes data from 120 reporting facilities in Missouri ESSENCE (<http://health.mo.gov/data/essence/pdf/missourimap.pdf>).

Graph 6. Patients Hospitalized with Influenza and/or Pneumonia Syndromes from Participating Missouri Hospitals, by Age Group, Week Ending April 23, 2016



Data Source: Hospitalization data from Missouri Department of Health and Senior Services (DHSS), Bureau of Reportable Disease Informatics, ESSENCE HL7 messaging portal. Includes data from 120 reporting facilities in Missouri ESSENCE (<http://health.mo.gov/data/essence/pdf/missourimap.pdf>). Population data from DHSS Population MICA 2014 (<http://health.mo.gov/data/mica/mica/population.php>).

Additional Influenza Data Sources:

St Louis Children’s Hospital Laboratory: <http://slchlabtestguide.bjc.org/Default.aspx?url=835740fa-b459-4ebd-a158-d4479d887579>

Centers for Disease Control and Prevention: National Influenza Surveillance (FLUVIEW) <http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>

World Health Organization: International Influenza Surveillance: http://www.who.int/influenza/surveillance_monitoring/en/